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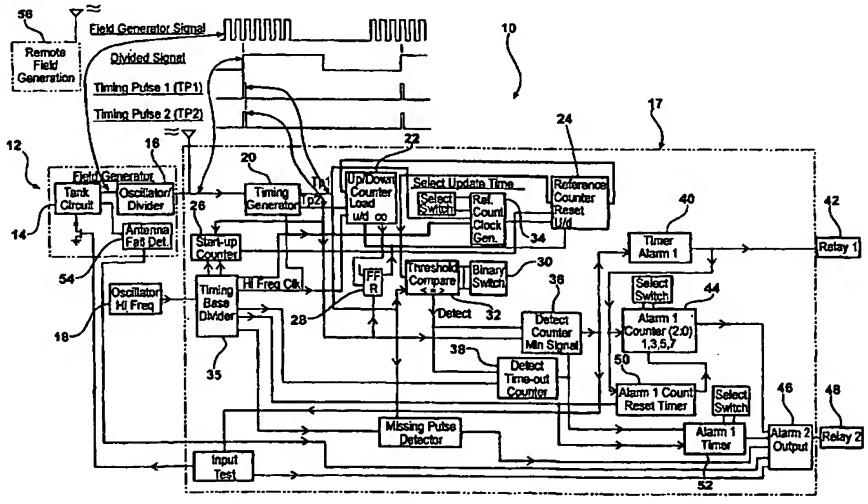
(54) Title: APPARATUS AND METHOD FOR PROCESSING CAPACITOR SENSOR SIGNALS USING DIGITAL FREQUENCY SHIFT MEASUREMENT TECHNIQUES WITH FLOATING REFERENCE



(57) Abstract: The present invention provides a capacitive sensing technique that is advantageously useful for security applications wherein digital technology is used to measure frequency shifts caused by a conductive or grounded object moving within a capacitive sensing field. The system includes a floating reference to compensate for drifting or offsets caused by electrical noise or other environmental conditions. The system also includes a CPLD integrated circuit or microprocessor and operative to monitor changes in a sensing field signal generated by field generating circuit (14) and digitally compare (32) a reference signal to the sensing field signal such that when a difference between the two signals exceeds a predetermined threshold, an object detection signal is generated by the monitor circuit which causes the activation of an alarm signal (40, 52).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01R 27/26; G05B 1/00
US CL : 324/661, 683

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : Please See Continuation Sheet

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,838,270 Ballinger et al. 24 September 1974, See entire document.	1-20
A	US 4,567,470 (Yoshikawa et al.) 28 Jan 1986, See entire document.	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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